The Current Status of the Tosawihi Quarries: Significance Beyond Lithic Procurement

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INTRODUCTION

Rusco (1983) wrote that Stephenson and Wilkinson (1969) were the first to note that archaeological sites located east of Winnemucca (east of the Osgood Mountains) and north of Battle Mountain were dominated by a white chert or opalite material. Thirty years earlier, Steward (1938:162) noted that:

> People who wintered on the Humboldt River above Battle Mountain were called Tosawi (tosa, white+ wi, knife) because they procured a high quality of white flint for knives in the mountains to the north. This name, unfortunately, became prominent and led to the fiction that all the Shoshoni in a large area around Battle Mountain had comprised a band by this name. Because, like other Shoshoni group names, Tosawi did not designate a definitely bounded linguistic, political, cultural, or even geographical division, no two writers have agreed in its use.
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> Holeman (1852, p.152) applied "White Knives" to people of the Humboldt River and Goose Creek Mountains. Hurt (1856, pp.228-229) restricted To-sow-witches or White Knives to about 250 people living near Stony Point. Burton (1862, p. 481) extended the terms to include even the Shoshoni in the vicinity of Diamond Valley. Powell and Ingallis (1874, p. 12) used it for people in the vicinity of Battle Mountain and Simpson (1876, pp. 34-35) considered the To-sa-witches to be a separate division of "Sho-sho-nee" who ranged along the Humboldt River in small parties between the Un-gowe-ah and Cooper's Ranges.
>
> The hunting and gathering area of the people most often called Tosawi was in the mountains around Rock Creek. Many of them often wintered on the Humboldt River below Battle Mountain.

And, according to Steward (1938:248):

> The much publicized Tosawi or White Knife people of the Battle Mountain region are so called because an excellent grade of white flint occurs in that country. But neither

> informants nor early writers agreed as to the boundaries of people so named. They had no organization and were not a band.

Harris (1940:39) added the "hi" to the end of "Tosawi" in the following manner, and generally agreed with Steward that the "White Knives" were not a band in the political sense of the term:

> Before the advent of the Whites, the *Tosawi*^{hi} Shoshoni ranged over that portion of the Great Basin now included in the northeastern section of the state of Nevada.
>
> *Tosawi*^{hi}, or "White Knives", was the term loosely applied to all Indian camps in this area. It appears, however, that this term was restricted at one time to those camps in the immediate vicinity of Tuscarora and Battle Mountain where white flint for knives and other artifacts is found. The White Knives are not to be considered as having a band organization with the traditional ethnological connotations of restriction and cohesiveness.

More recently, the Inter-Tribal Council of Nevada (1976:82-83) noted that:

> The Newe called the area seventy miles southwest of Elko *Tonomudza*, naming it after a greasewood-covered peak north of the valley. This land, near the boundary between the Newe and the Northern Paiutes, received the modern name "Battle Mountain" after a conflict between an emigrant train and an Indian group. Several Newe groups, concentrated in four main areas, once lived in the fertile valley...The Tosawi or White Knives, named after the white flint they made into knives and arrow points, lived north of Battle Mountain.

From an archaeological standpoint, surveys by professional archaeologists began at the Tosawihi Quarries in the early-to-mid 1970s. The first BLM survey occurred in 1977 (Waski 1977). This survey was in conjunction with the proposed development of a spring in support of

cattle grazing. Although Mary Rusco had earlier visited the Quarries, between 1977 and 1980, Rusco instigated what she called "The Tosawihi Quarry Project" (Rusco 1983). Rusco (1983; see also Rusco 1982:58-59) detailed the results of one mile transects in and around the Tosawihi region in order to define the first geographical boundaries of the "Tosawihi (White Knife) Quarry" (Figure 1). These surveys were not project-driven; Rusco essentially conducted these surveys on her own initiative. Rusco (1983) suggested that a discontinuous region, focusing on four key areas or loci measuring a total of 31 acres in size, be considered significant contributing loci to the eligibility of the District in the draft National Register of Historic Places Inventory – Nomination Form she completed. Rusco (1983) noted, however, that outcroppings of white chert were located in a vastly expanded region across nearly 28,500 acres. In a letter to the BLM dated August 10, 1983, however, Rusco (1983) included a map which suggested that the District should be at least 485 acres in size (Figure 1).

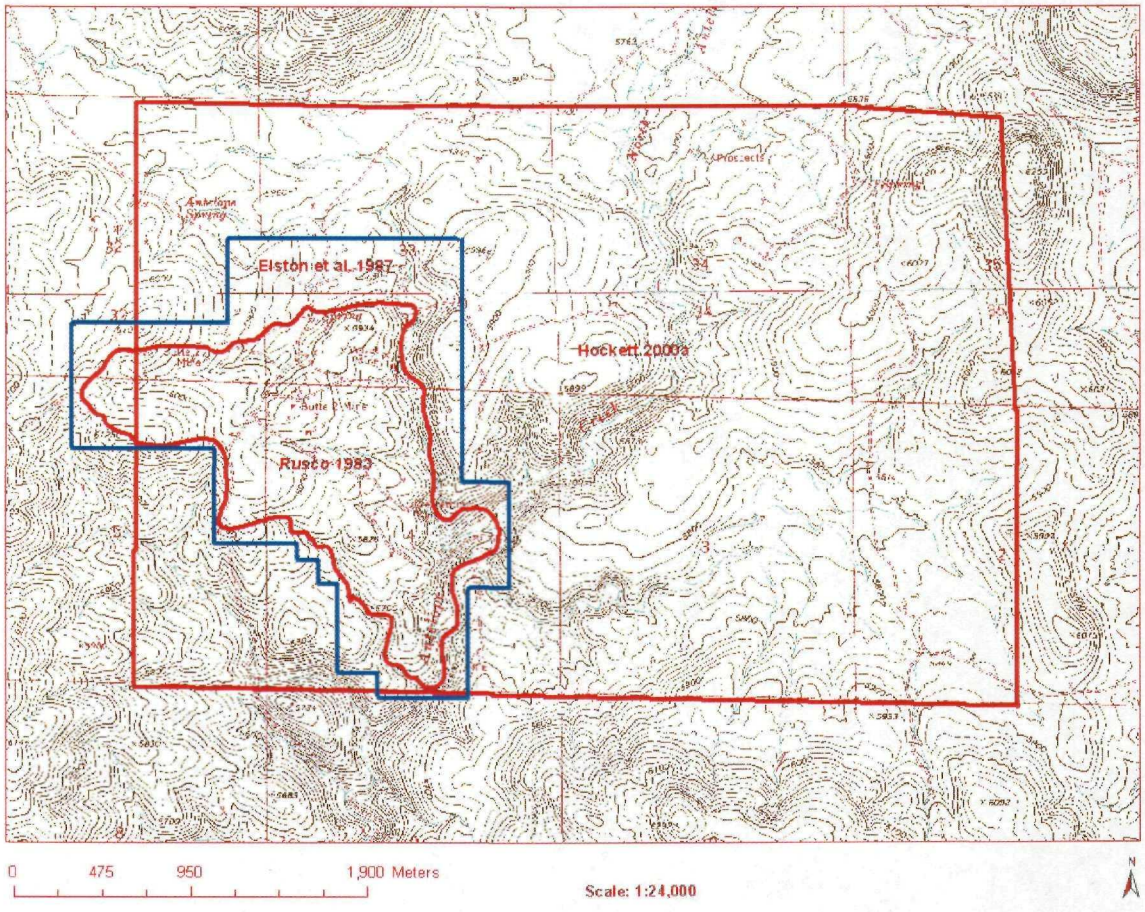

Figure 1. Changing boundaries of the Tosawihi Quarries Archaeological District between 1983 - 2000.

The first archaeological survey in conjunction with a proposed mining operation in the Tosawihi Quarries area was completed by Stanley Jaynes in 1981. This survey was small, measuring a little over two acres in size. The first large-scale survey of the Quarries, which initiated Intermountain Research's (IMR) long-standing work there, began in 1987 (Elston et al. 1987), and consisted of 823 acres. This survey resulted in the definition of the Tosawihi Quarries Archaeological District (26Ek3032) of like size (Figure 1). Between 1987 and 1995, IMR archaeologists completed numerous surveys and several excavation projects in the region (Appendix 1).

During IMR's investigations, important ethnographic research was also taking place, most notably by Clemmer (1990) and Rusco and Raven (1992). The early work by Clemmer (1990:3) helped establish the notion that the Tosawihi Quarries were a doomed resource:

> The Tosawihi Quarry has already been assessed as being eligible for listing on the National Register of Historic Places. But the area – about 800 acres – is under a mining lease from the BLM to Galactic Mining, a Canadian corporation based in Vancouver. If mining is undertaken, at least a third of the ancient Quarry will be destroyed in the first year of operation. If there is a lot of gold there, the whole site could be destroyed.

Clemmer was correct about one thing – there was a possibility for significant damage to occur to the Quarries as a result of gold mining operations. But, as I detail below, this situation did not materialize.

It has now been 10 years since IMR conducted its last surveys and excavations in the Tosawihi Quarries area (Appendix 1). Between 1995 and 2005, most of the surveys in and around the Quarries have been completed by BLM archaeologists. Before discussing some details of the results of these post-IMR inventories, however, it is necessary to provide a more general overview of the BLM's management strategy at the Tosawihi Quarries over the past decade. This overview will explain the BLM's decisions to: (1) redefine the boundaries of the Tosawihi Quarries Archaeological District from approximately 800 acres to nearly 4,000 acres (Figure 1); (2) provide new site and loci numbers for resources located within the District; and (3) define the Tosawihi Quarries Traditional Cultural Property (TCP).

Historic Overview of the Recordation Strategies at the Tosawihi Quarries

In the late 1980's, IMR redefined the boundaries of the Tosawihi Quarries Archaeological District (26EK3032) from that proposed by Rusco (1983) (Figure 1), and defined 219 loci within its boundaries (e.g., Elston et al. 1987; Elston and Raven 1991). The District boundaries encompassed about 825 acres. Definitions of site loci focused on artifact density and the

presence of features such as quarry pits, and are discussed in further detail elsewhere in this monograph. Subsequent to the District redefinition, IMR completed additional block surveys to the west and east of 26EK3032 (e.g., Budy 1987; Raven 1988). All of these surveys were project-driven by private industry seeking economic deposits of gold and silver.

These additional block surveys recorded numerous bedrock outcroppings of chert, quarry pits, and associated campsites. However, instead of assigning loci numbers, these sites were assigned individual site numbers (both Smithsonian and BLM numbers) because they fell outside of the boundary of 26EK3032. Put another way, instead of expanding the boundaries of 26EK3032 and assigning successive loci numbers, these locations were treated as new sites outside of the District itself. Many subsequent smaller surveys were conducted near the District boundaries as well (Appendix 1) -- some of which assigned loci numbers and some of which assigned site numbers to newly recorded resources.

IMR was well aware of the inconsistency of this strategy, but sometimes perfect protocol cannot match the real world deadlines set in CRM. In any case, these circumstances began a succession of events that the BLM would later find untenable to properly manage the District. By the end of 1995, the District and surrounding lands consisted of a confusing mixture of loci and site designations, including the fact that a number of sites were assigned a Smithsonian number, a BLM site number, and a District locus number!

Based on a review of the geological map of the region (Coats 1987), the BLM determined that the extent of the bedrock outcroppings of artifact-quality chert that make up the Tosawihi Quarries was likely to be concentrated over a region of about 4,000 acres in size. The unique layers of interbedded tuff and chert (opalite) are generally bounded to the north, south, east, and west by thick rhyolites and basalts, although ash flows and chert outcroppings are found outside of this zone, albeit more sparingly. This latter situation led Rusco (1983) to note that small chert-bearing outcrops can be found discontinuously spread across an area measuring nearly 28,000 acres in size. But the concentrated outcrops of opalite occurred within a 4,000-acre zone that included 26EK3032 and an additional 3,000-plus acres.

Some of the cherty deposits at Tosawihi contain mercury, and as Lapointe et al. (1991:131) put it:

> The ore deposits in the Ivanhoe district consist of several mercury deposits and the Hollister volcanic-hosted gold deposit. The mercury deposits occur in opalite derived from silicification of rhyolitic ash-flow tuff and tuffaceous sedimentary rocks of the upper tuff unit.... Several of the deposits exhibit features that suggest that the deposits were formed at quite shallow depths in a hot springs environment. Siliceous spring sinter has been reported from a locality near the Old Timer mine and probable subaqueous opalite and cinnabar deposition and hydrothermal brecciation have been reported at the Rimrock mine....

A BLM review of all of the surveys completed before 1999 revealed that there had been 226 loci and 91 individual site numbers assigned, for a total of 317 sites and loci, within this 4,000-acre geologically-defined zone (although not all of the 4,000 acres had yet been surveyed). In many cases, there were few qualitative or quantitative differences between loci and sites in terms of presence and density of artifacts and features. Many of them contained bedrock outcroppings of chert, quarry pits, and/or heavy concentrations of flakes, bifaces, and cores often numbering in the hundreds per square meter.

In addition, recent BLM pedestrian surveys revealed that there were no obvious boundaries between many of the loci originally defined by IMR. Individual quarry pits were easily distinguishable from one another on the ground, and IMR often assigned loci numbers based on the locations or clusters of these quarry pit features. However, the areas between the loci were often found to contain heavy concentrations of flaking debris, sometimes numbering in the hundreds or thousands of artifacts per square meter.

It therefore became clear to the BLM that (1) the Tosawihi Quarries Archaeological District should consist of an area measuring about 4,000 acres in size rather than the 825 original acres of 26EK3032; (2) within this 4,000 acres, two-thirds of the artifact concentrations were previously assigned loci numbers under the single 26EK3032 site designation, while one-third of the artifact concentrations were previously assigned unique site numbers; and (3) the BLM could not rely on the original loci designations to manage the resource because earth-disturbing activities that may have "missed" one of these loci may have resulted in the disturbance of nearby campsites or heavy lithic reduction debris.

Faced with this situation, as well as the fact that in the late 1990s Great Basin Gold Company (GBG) had recently purchased all of the mining claims previously held by Newmont Mining Company – and GBG had informed the BLM that they intended to begin new exploration activities within the Quarries – the BLM set out to "clean up" the loose ends created by the previous surveys. To this end, Janice Stadelman (BLM Minerals Compliance Specialist) and I walked the perimeter of most of the known sites, loci or concentrations of artifacts with a GPS Trimble unit set for sub-decimeter accuracy. We also walked the perimeter of the major mining disturbance that had occurred prior to 1999, including the two open pits and the large stockpile created during the open pit mining phase (Figures 2 and 3). At this time, Newmont had decided to end their mining operations at the Quarries, and were actively reclaiming the southwestern corner of the District that had been previously disturbed. For their part, GBG intended to open an underground operation, and they desired to avoid all surface loci and sites eligible for the National Register of Historic Places.

As Figures 2 and 3 illustrate, the previous large-scale mining disturbance is confined to the extreme southwestern corner of the Tosawihi Quarries Archaeological District. In fact, about one-half of that disturbance is located outside of the District itself. Approximately 90% (or more) of the District remains intact to this day. The rumors that the Tosawihi Quarries were destroyed by mining activity are in error.

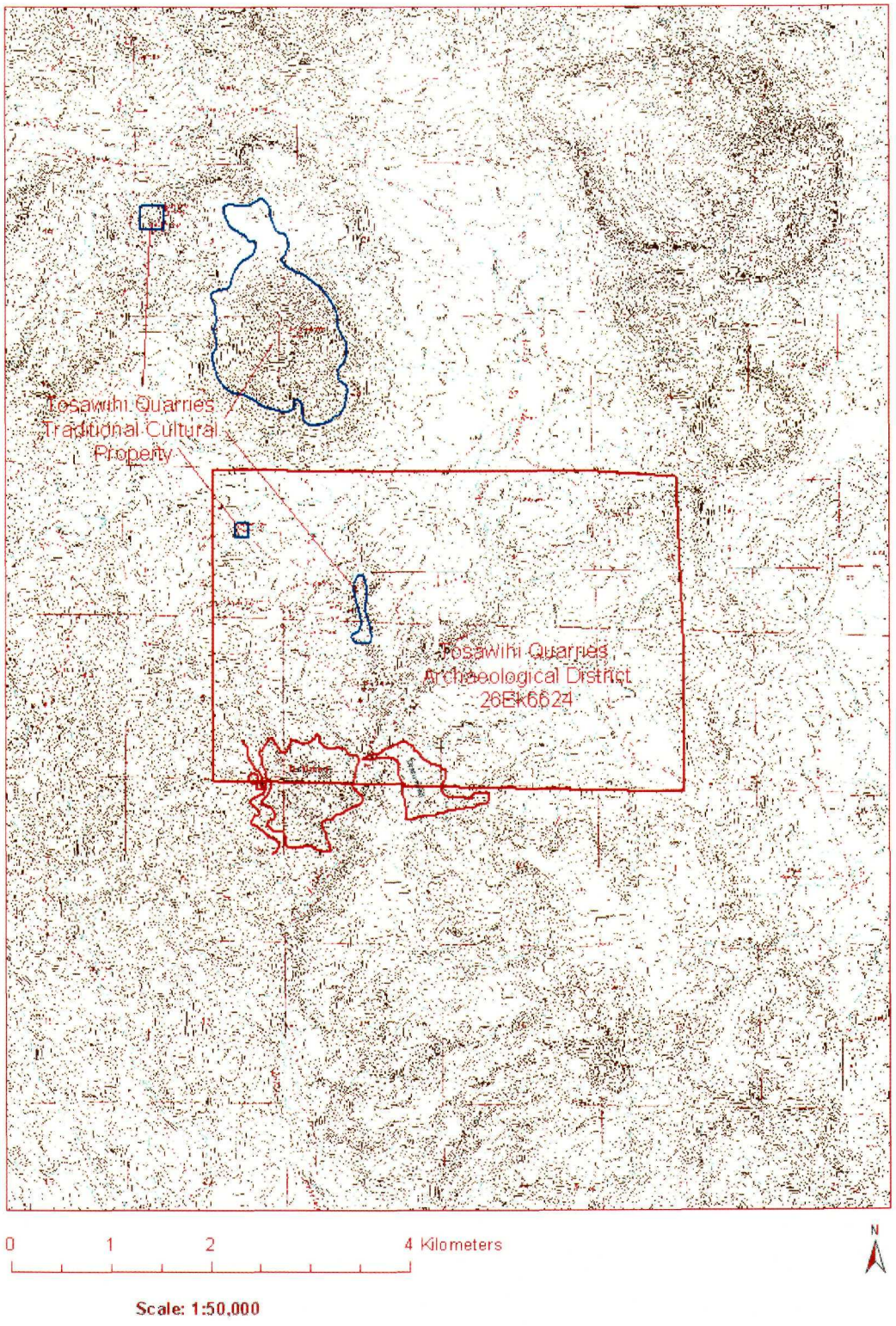

Figure 2. Size and geographic relationships between the Tosawihi Quarries Archaeological District, Tosawihi Quarries Traditional Cultural Property, and major mining disturbance.

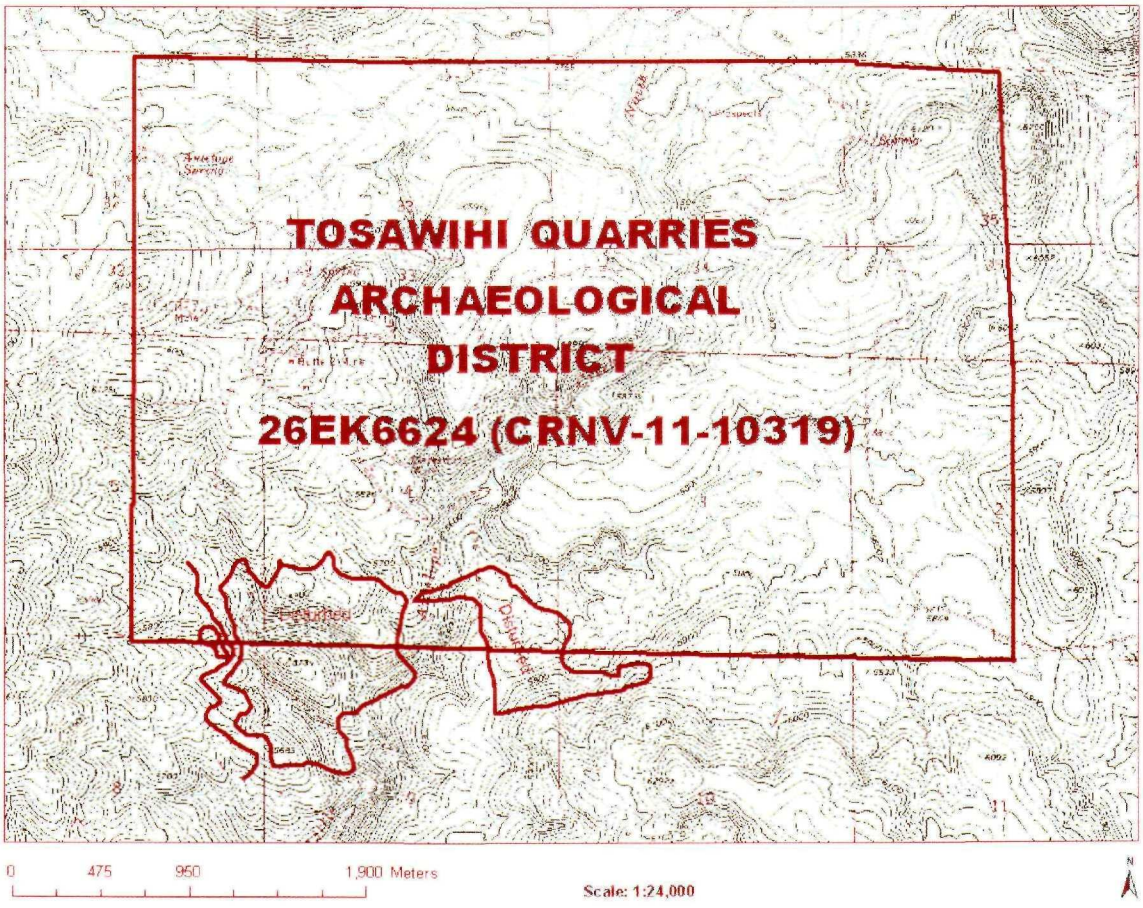

Figure 3. Size and geographic relationship of major mining disturbance and the Tosawihi Quarries Archaeological District.

The newly-designated artifact concentrations were defined by BLM utilizing IMR's original definition of a "locus" based on artifact density. These GPS-generated 'area features' were then overlain with IMR's original loci and site designations and locations. This process resulted in the BLM collapsing the original 317 sites and loci into 152 loci (Appendix 2). The loci were renumbered, 1 through 152, and then a table was created to cross-reference the new designations with their original numbers (Appendix 2). Additionally, because of the baggage associated with the 825-acre original District boundaries (26EK3032), in order to avoid confusion the newly expanded 4,000-acre District was assigned a new Smithsonian number – 26EK6624, as well as an associated BLM site number – CRNV-12-10319 (Figure 3) (Hockett 2000a). Tables were also created at this time that summarized the previously determined eligible site numbers, and sites and loci mitigated to date within and near the Quarries (Appendices 3-4). Eligible sites recorded and mitigated near the District boundaries are summarized in Appendices 5-6.

BLM's GPS work also determined the following: (1) IMR's original loci numbered 12, 13, 18, 19, 20, 21, 22, 23, 26, 93, and 98 have been destroyed by mining activity; (2) IMR's locus 223 was a very small lithic scatter that was not assigned one of the 152 loci defined by BLM; (3) IMR's loci 178 (also 26EK3223), 179 (also 26EK3224), and 180 (also 26EK3225) are lithic scatters that lie outside of the boundary of 26EK6624; and (4) Smithsonian number 26EK3034 was originally assigned to a region located to the southwest of the originally-defined 825-acre 26EK3032, and IMR's original plan was to assign 124 loci under the umbrella of that site number. However, this latter plan was never instigated, and according to BLM records, these 124 loci were assigned a much smaller number of individual Smithsonian site numbers, and 26EK3034 became a defunct number that was never used.

The BLM then consulted with the State Historic Preservation Office, determining that the Tosawihi Quarries Archaeological District (26EK6624) was eligible for the National Register under criteria "a" and "d."." As an archaeological resource, 26EK6624 was determined eligible under criterion "a" essentially for its uniqueness as one of the largest prehistoric chert quarries in the western United States (and the largest in the Great Basin), and under criterion "d" for its potential to provide significant additional information about the prehistory of the region (Hockett 2000a).

Since the BLM's redefinition of the District in January of 2000, an additional 11 loci have been recorded within its boundaries (Hockett 2000b; 2002). Thus, as of March, 2006, there are 163 loci eligible for the National Register within 26EK6624. And, as of this date much of the northwestern one-quarter of the District remains unsurveyed.

Also in the late 1990s, at the same time that fieldwork was underway to map and record the archaeological loci and previous mining disturbance at the Quarries, the BLM initiated new consultations with the Western Shoshone regarding the potential impacts of mine dewatering to seeps, springs, and streams that may hold special cultural importance to traditional life ways. As a result of these efforts, two Traditional Cultural Properties were finally defined, one at Rock Creek and one at Tosawihi. The Tosawihi Quarries TCP (CRNV-11-9932) encompasses several springs, a vision quest locale, and a chert collecting area (Figure 2) (Hockett 1999). The Tosawihi Quarries TCP was also determined eligible for the National Register under criteria "a" and "d".

Recent Surveys in the Tosawihi Quarries Area: Information Relevant to Understanding Large Game Hunting in the Region

Since 1995, there have been 14 cultural resources reports completed in the Tosawihi Quarries area. Two of these reports were located within the boundaries of 26EK6624, and 12 were completed near the Quarries. These surveys covered approximately 223 acres. The two surveys within the District recorded the 11 additional loci within the District boundaries (Hockett 2000b, 2002). The 12 surveys near the Quarries recorded 42 additional prehistoric sites. These loci and sites contained dozens of individual quarry pits and a host of bifaces, cores, and finished tools (Table 1).

Table 1. Tools and bifaces recorded within and near the Tosawihi Quarries Archaeological District since 1995.

	Projectile points	Bifaces	Ceramics	Grinding stones
Within Quarries	14	37	1	2
Near Quarries	25	102	0	9
Totals	39	139	1	11

Of the 39 projectile points recently recorded, 31 were typable. Of these, the vast majority are from the James Creek Phase and older, that is, pre-Late Archaic or pre-1,300 BP (see Table 2 below). A total of 25 of the 31 (81%) points were James Creek Phase or older styles. If these points are scaled to length of time each was produced, however, some interesting trends emerge.

Before discussing these trends at Tosawihi and other nearby regions, however, the assumptions guiding the following analyses are in order. First, overwhelming evidence suggests that Elko points were generally not manufactured before ca. 3,500 BP in northeastern Nevada (Hockett 1995; Hockett and Morgenstein 2003). Elko points were likely manufactured during the Maggie Creek Phase of the Late Archaic (ca. 1,300 – 550 BP), albeit much less frequently than during the James Creek Phase. Here, however, I assigned all Elko points to within the James Creek Phase (ca. 3,500 – 1,300 BP), and consider them generally representative although not always diagnostic of that time period. Second, current evidence suggests that Gatecliff points were manufactured during a relatively short period of time, lasting about a millennium-and-a-half, between about 5,000 – 3,500 BP (Hockett and Morgenstein 2003; McGuire et al. 2004). Humboldt points are poorly dated from the region, but definitely appear to overlap with Gatecliff points (Hockett 1995; McGuire et al. 2004). Humboldt points, and in particular the Humboldt Concave-Based variety, are known to have been manufactured earlier during the Middle Holocene as well (Holmer 1986). For example, Humboldt Concave-Based points are present in pre-5,000 BP, Middle Holocene-aged layers at sites such as Bonneville Estates Rockshelter. Nevertheless, C-14 and hydration data place the majority of Humboldt points within the South Fork Phase along with Gatecliff points. Thus, for this exercise, I placed Gatecliff and Humboldt points together into the South Fork Phase. Finally, I have assumed that projectile points were manufactured primarily for the hunting of large game, and that the numbers of projectile points previously recorded in the region, scaled to the number of years each style of point was manufactured, indicate diachronic patterns of intensity of large game hunting.

The projectile point data from the recent surveys completed after 1995 suggest that hunting near the Tosawihi Quarries was very infrequent between 11,500 and 7,500 BP (Table 2). Beginning sometime during the Middle Holocene (ca. 8,300 – 4,400 BP), however, hunting may

have increased in importance compared to Late Pleistocene and Early Holocene times (prior to 8,300 BP) with the advent of the Pie Creek Phase and the manufacture of Large Side-Notched projectile points. This trend continues through the South Fork and James Creek phases, with rather dramatic increases in projectile points between about 5,000 and 1,300 BP. The number of points decline to Middle Holocene levels during the early Late Archaic, or during the Maggie Creek phase, only to rise to their highest level during the Protohistoric Period. These latter data would seem to confirm the significance of the Quarries to the Western Shoshone of the region at historic contact.

Table 2. Projectile points recorded within and near the Tosawihi Quarries since 1995.

Type	Phase	Number Found	Points/Century
Desert Side-Notched/Cottonwood	Eagle Rock 550 BP – 50 BP	5	1.0
Rose Spring/Eastgate	Maggie Creek 1,300 – 550 BP	1	.13
Elko	James Creek 3,500 – 1,300 BP	13	.59
Gatecliff/Humboldt	South Fork 5,000 – 3,500 BP	6	.40
Large Side-Notched	Pie Creek 7,500 – 5,000 BP	4	.16
Great Basin Stemmed	Dry Gulch 10,800 – 7,500 BP	2	.06
Clovis	Izzenhood 11,500 – 10,800 BP	0	.00

How do these data match with the much larger sample of projectile points recorded by IMR before 1995? Table 3 shows the typological distribution of 239 projectile points listed by Ataman and Drews (1991) for the Tosawihi Quarries area. These data show how different samples and sample sizes can lead to different patterns of projectile point distribution. IMR's sample would indicate initial use of the Quarries during Clovis times, followed by a rather dramatic increase during the latest Pleistocene and Early Holocene (Great Basin Stemmed). A reduction in use is seen during the Middle Holocene (Pie Creek Phase), followed by a dramatic increase during the early Late Holocene (South Fork Phase). Large game hunting would appear to have been much less important during the middle portion of the Late Holocene (James Creek Phase), only to rise dramatically again during the early Late Archaic (Maggie Creek Phase). Use of the Quarries for hunting large game again rises to its greatest extent during the Protohistoric, as four times the number of points were deposited per century during the Eagle Rock phase compared to the Maggie Creek phase. Again, this may signal the importance of the area to the Western Shoshone over the past 550 years.

Table 3. Projectile points from the Tosawihi Quarries recorded prior to 1995, and reported by Ataman and Drews (1991).

Type	Phase	Number Found	Points/Century
Desert Side-Notched/Cottonwood	Eagle Rock 550 BP – 50 BP	99	20.0
Rose Spring/Eastgate	Maggie Creek 1,300 – 550 BP	35	4.7
Elko	James Creek 3,500 – 1,300 BP	35	1.6
Gatecliff/Humboldt	South Fork 5,000 – 3,500 BP	40	2.7
Large Side-Notched	Pie Creek 7, 500 – 5,000 BP	9	.36
Great Basin Stemmed	Dry Gulch 10,800 – 7,500 BP	20	.61
Clovis	Izzenhood 11,500 – 10,800 BP	1	.14

If we combine all of the projectile points recovered by IMR and BLM within the Quarries and nearby, we get the following pattern (Table 4):

Table 4. Total number of typable projectile points (270) recorded within and near the Tosawihi Quarries since 1987, based on Ataman and Drews (1991) and recent BLM surveys.

Type	Phase	Number Found	Points/Century
Desert Side-Notched/Cottonwood	Eagle Rock 550 BP – 50 BP	104	21.0
Rose Spring/Eastgate	Maggie Creek 1,300 – 550 BP	36	4.8
Elko	James Creek 3,500 – 1,300 BP	48	2.2
Gatecliff/Humboldt	South Fork 5,000 – 3,500 BP	46	3.1
Large Side-Notched	Pie Creek 7, 500 – 5,000 BP	13	.52
Great Basin Stemmed	Dry Gulch 10,800 – 7,500 BP	22	.67
Clovis	Izzenhood 11,500 – 10,800 BP	1	.14

These figures generally conform to the relative percentages obtained by IMR, but the greater numbers of pre-Late Archaic projectile points recently recorded by the BLM within and near the Quarries has smoothed out the transitions between phases to a certain extent, rendering variability between phases less dramatic in some cases compared to IMR's sample. Thus, after a very minimal use during Clovis times, Late Pleistocene and Early Holocene foragers manufacturing Great Basin Stemmed points appear to have utilized the Quarries with much greater intensity, although point numbers still fall below an average of one specimen per century. Use of the Quarries declines during the Middle Holocene when Large Side-Notched points were manufactured, but the region was not entirely abandoned, and overall use was not dramatically lower than during the preceding phase. Use of the Quarries for hunting large game increased dramatically during the early phases of the Late Holocene with the manufacture of Gatecliff and Humboldt points, then dropped during the middle portion of the Late Holocene when Elko points predominated. Hunting increased in importance during the earliest phase of the Late Archaic when Eastgate and Rose Spring points enter the record, and then increases four-fold during the subsequent Protohistoric Period of the last 550 years.

I have previously shown that the degree of large game hunting in the prehistoric Great Basin varies considerably from site to site based on setting and elevation (Hockett 2005). For example, during the Late Pleistocene and Early Holocene at mid-elevation settings (~ 5,200 feet), such as at Bonneville Estates Rockshelter, faunal remains suggest a quite eclectic diet that consisted of large and small terrestrial game, birds, and insects. While large game was present and these animals clearly were taken at this time, it was not the focal point of hunting activities. In contrast, at Bonneville Estates and other higher elevation sites such as Sudden Shelter, the taking of large game was the primary focus of hunting activities during the relatively warm and dry Middle Holocene. A caveat here is the fact that at Bonneville Estates, the four major pulses of human occupation during the Middle Holocene were of relatively short duration, and were further associated with wetter phases within this overall warm and dry climatic period. At some lower elevation sites such as Camels Back Cave, leporids predominated rather than large game in the Middle Holocene levels (Schmitt and Madsen 2005). These data overall suggest that large game hunting was the predominant activity that occurred at specific locales during the Middle Holocene, while at other sites smaller game predominated. Whether all large game hunting during the Middle Holocene can be correlated to wetter intra-phases such as those documented at Bonneville Estates Rockshelter is unknown at this time.

At Tosawihi, large game hunting apparently continued in this mid-elevation setting (sites there average about 5,600 feet in elevation) during the Middle Holocene, albeit at slightly reduced levels compared to the Dry Gulch phase. Whether these Large Side-Notched points were left behind during those same wetter intra-phases similar to those documented at Bonneville Estates Rockshelter, or during drier intra-phase periods, is unknown as none of these points are associated with single component occupations that have been radiocarbon dated.

During the Late Holocene, large game hunting appears to have waxed and waned at Tosawihi throughout the last 4,500 years, reaching its peak within the past 550 years. This is a most interesting situation, and adds to the growing body of evidence suggesting variability in

hunting patterns across the Late Holocene at specific locales as well. For example, I found that large game hunting remained consistent throughout the Late Holocene at sites such as Pie Creek Shelter in northeastern Nevada and Hogup Cave in northern Utah (Hockett 2005). The projectile point data from Tosawihi, however, suggest that large game hunting was relatively moderate between 5,000 – 3,500 BP and 1,300 – 550 BP (but of greater importance than during the Late Pleistocene, Early Holocene, or Middle Holocene), relatively low between 3,500 – 1,300 BP, and then relatively high during the past 550 years. Explanations based simply on changes in climate seem unlikely to account for this variability. The projectile point data from the Tosawihi Quarries hold value for addressing these issues in the future.

These data may be compared to the distribution of projectile points in other regions of northeastern Nevada that have had relatively extensive survey coverage. These areas include Little Boulder Basin south of Tosawihi, the Spruce Mountain area southeast of Tosawihi, and Pilot Creek Valley east of the Quarries (Table 5 and Figure 4). Schroedl (1996) reported on the distribution of 716 points recovered during pedestrian surveys in Little Boulder Basin through 1995 (Table 5). These results are intriguing. Some of the general patterns in projectile point frequency match those from Tosawihi; in other cases, notable differences are seen. The Little Boulder Basin point distribution data, like Tosawihi, show very limited use during the Late Pleistocene and Early Holocene. However, Tosawihi appears to have been a more significant draw during Western Stemmed times than was Little Boulder Basin (22 stemmed points at Tosawihi versus one at Little Boulder Basin). In contrast to Tosawihi, large game hunting increases during the Middle Holocene in Little Boulder Basin – by nearly 4,000%! A rather dramatic increase in large game hunting (a nearly 600% increase) is then seen at the earliest stages of the Late Holocene during the manufacture of Gatecliff and Humboldt points. This pattern matches that seen at Tosawihi. However, at Little Boulder Basin large game hunting may have increased slightly during the middle portion of the Late Holocene, between 3,500 – 1,300 BP, associated with Elko point manufacture. The other major differences between Little Boulder Basin and Tosawihi are seen in the use of the two areas during the Late Archaic. In Little Boulder Basin, there is a dramatic three-fold increase in projectile point frequency during the earliest stages of the Late Archaic, and then a rather dramatic reduction in large game hunting during the final 550 years of occupation. Tosawihi, of course, shows just the opposite pattern – a four-fold increase in hunting use from the early to late stages of the Late Archaic.

These data would seem to imply that similar strategies of land use were being employed during the hunting of large game during Clovis times, and again during the early-to-mid stages of the Late Holocene, or during the manufacture of Clovis, Gatecliff, and Humboldt projectile points. However, Western Stemmed groups appeared to favor Tosawihi over Little Boulder Basin, while Middle Holocene foragers favored Little Boulder Basin over Tosawihi. In addition, during the early Late Archaic (Eastgate and Rose Spring), Little Boulder Basin was preferred over the Tosawihi region to the north during large game hunting forays. This is also confirmed by the fact that gray ware ceramics of the Fremont tradition are also found in much greater frequency in Little Boulder Basin than at Tosawihi. Foraging during the Fremont period, then, was more focused in Little Boulder Basin than at Tosawihi. During the final phases of the Late Archaic, with the manufacture of Desert Side-Notched points indicative of Western Shoshone occupation, focus shifted northward into the Tosawihi region. Neither phase eschewed the other

region during the Late Archaic, but clearly differences in land use are seen. One implication of these data may be that the pre-550 BP foragers did not ascribe the same importance to the Tosawihi Quarries as did the Western Shoshone. If that is the case, then Tosawihi as a sacred locale may be restricted in time to the Protohistoric. This is, of course, highly speculative, but remains a possibility.

Table 5. Total number of projectile points recorded from surveys in Little Boulder Basin through 1995 (Schroedl 1996).

Type	Phase	Number Found	Points/Century
Desert Side-Notched/Cottonwood	Eagle Rock 550 BP – 50 BP	79	15.8
Rose Spring/Eastgate	Maggie Creek 1,300 – 550 BP	248	33.0
Elko	James Creek 3,500 – 1,300 BP	236	10.7
Gatecliff/Humboldt	South Fork 5,000 – 3,500 BP	123	8.2
Large Side-Notched	Pie Creek 7, 500 – 5,000 BP	29	1.2
Great Basin Stemmed	Dry Gulch 10,800 – 7,500 BP	1	.03
Clovis	Izzenhood 11,500 – 10,800 BP	0	0

Near Spruce Mountain, a sample of nearly 1,200 projectile points produced the patterns displayed in Table 6 (Hockett 2005:727, Table 9). The general patterns here are: (1) low numbers of points during the Late Pleistocene and Early Holocene; (2) increases in large game hunting intensity during the Middle Holocene; (3) a dramatic increase in points beginning about 5,000 BP; and (4) a drop in large game hunting during the James Creek Phase. At Spruce, there was a continued drop in the intensity of large game hunting during the earliest phase of the Late Archaic; in contrast, large game hunting increases at this time at both Tosawihi and Little Boulder Basin. Similar to Tosawihi, large game hunting increased again rather dramatically during the past 550 years near Spruce Mountain.

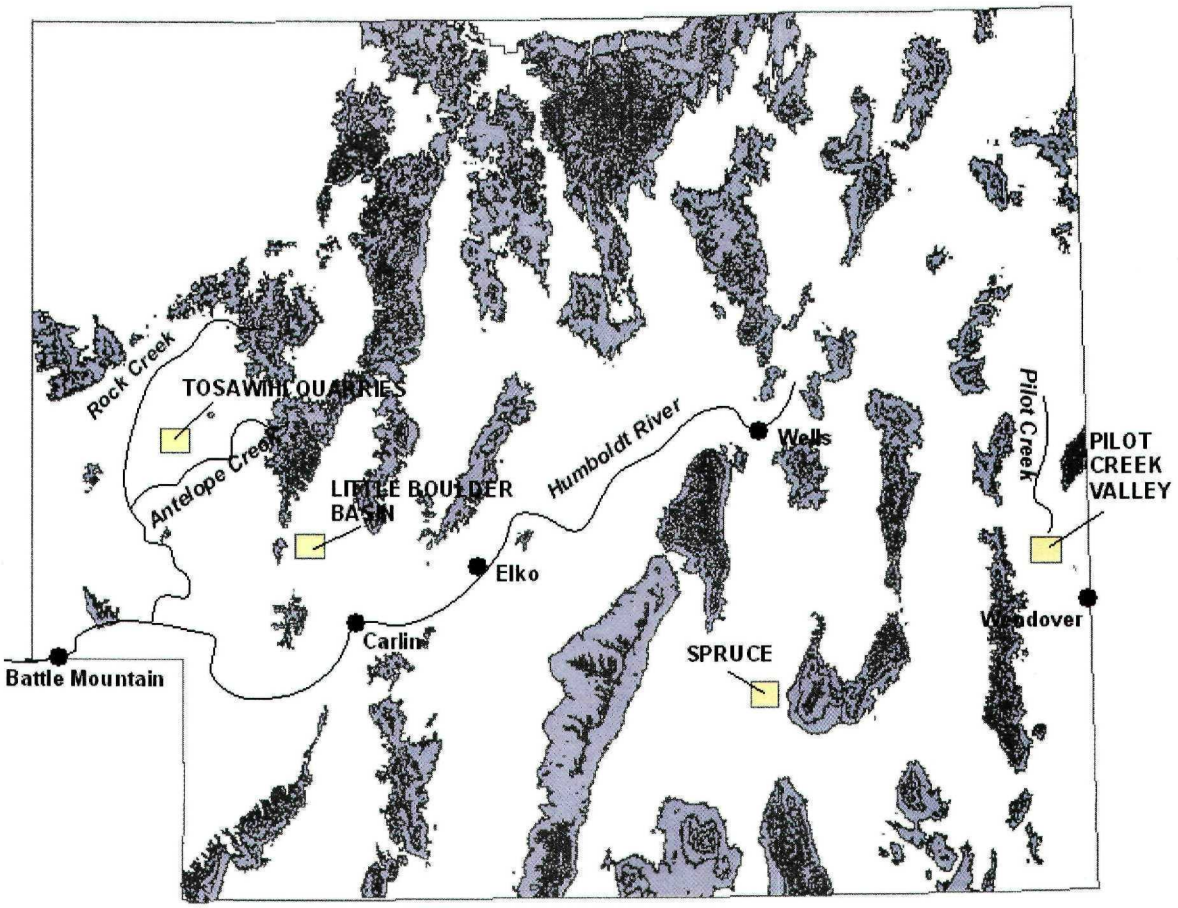

Figure 4. General location of the four study areas discussed in the text.

Table 6 Total number of projectile points recorded near Spruce Mountain through 2004 (Hockett 2005).

Type	Phase	Number Found	Points/Century
Desert Side-Notched/Cottonwood	Eagle Rock 550 BP – 50 BP	124	22.5
Rose Spring/Eastgate	Maggie Creek 1,300 – 550 BP	115	15.3
Elko	James Creek 3,500 – 1,300 BP	428	19.5
Gatecliff/Humboldt	South Fork 5,000 – 3,500 BP	437	29.1
Large Side-Notched	Pie Creek 7, 500 – 5,000 BP	34	1.4
Great Basin Stemmed	Dry Gulch 10,800 – 7,500 BP	29	.88
Clovis	Izzenhood 11,500 – 10,800 BP	0	0

In Pilot Creek Valley, Moore (1994) reported on the recordation of 265 typable points across a survey area encompassing 18,500 acres in both lowland and upland settings. The breakdown of the chronological distribution of these points is displayed in Table 7. These data show the same patterns of relatively low numbers of points during the Izzenhood and Dry Gulch phases, either suggesting low population densities, a lower reliance on large game hunting compared to later periods, or both. Again, the intensity of large game hunting increases during the Middle Holocene, and then rather sharply spikes at the beginning of the Late Holocene during the South Fork Phase, just as they do at Tosawihi, Little Boulder Basin, and Spruce. A difference in Pilot Creek Valley, however, is that the sharpest spike in large game hunting occurs during the James Creek Phase during the middle portion of the Late Holocene rather than earlier in the beginning of the Late Holocene. Large game hunting drops but remains relatively elevated during the earliest Late Archaic, and then spikes again to its highest level during the Protohistoric, the latter pattern of which was also seen at Tosawihi and to a lesser extent at Spruce.

Table 7. Total number of projectile points recorded in Pilot Creek Valley and the Toano Range (Moore 1994).

Type	Phase	Number Found	Points/Century
Desert Side-Notched/Cottonwood	Eagle Rock 550 BP – 50 BP	35	6.4
Rose Spring/Eastgate	Maggie Creek 1,300 – 550 BP	30	4.0
Elko	James Creek 3,500 – 1,300 BP	137	6.2
Gatecliff/Humboldt	South Fork 5,000 – 3,500 BP	50	3.3
Large Side-Notched	Pie Creek 7, 500 – 5,000 BP	7	.28
Great Basin Stemmed	Dry Gulch 10,800 – 7,500 BP	5	.15
Clovis	Izzenhood 11,500 – 10,800 BP	1	.14

Together, the projectile point data from Tosawihi, Little Boulder Basin, Spruce Mountain, and Pilot Creek Valley suggest low intensity large game hunting during the Late Pleistocene and Early Holocene. At this time, large game hunting may not have been as important as later time periods, a conclusion recently advanced by Hockett (2005) for the Middle Holocene and by Hildebrandt and McGuire (2002) and McGuire and Hildebrandt (2005) for the Late Holocene. The fact that these data may be reflecting intensity of large game hunting more than population size per se, however, may be more applicable to the Dry Gulch (Stemmed Series) phase rather than the Izzenhood (fluted) phase. There is a rather sharp increase in the number of Dry Gulch Phase sites compared to sites that contain fluted points in northeastern Nevada. In the four samples here, there were only two fluted artifacts recorded – a Clovis perform at Tosawihi and a probable broken fluted point from Pilot Creek Valley. This confirms the results of survey data from the rest of the region, where only 6-7 fluted points have been found in nearly 30 years of survey (Fawcett and Hockett 2006). If Haynes (2002) is correct that the earliest foragers in western North America chose a hunting strategy that focused on large megafauna, then the low numbers of fluted points recorded from the region may be a better reflection of low human population density coupled with high mobility rather than a reflection of the reliance on large mammal resources for sustenance. If this is the case, then it would further suggest that megafaunal populations were likely exceedingly sparse in the central Great Basin between 11,500 and 10,800 BP (see also Willig and Aikens 1988).

Although the intensity of large game hunting may not have been dramatic as measured by number of points per century during the subsequent Dry Gulch phase, the number of locales or sites containing Great Basin Stemmed points does jump considerably compared to the Izzenhood Phase (Fawcett and Hockett 2006). This suggests the first population pulse occurred in this part

of the Great Basin between 10,800 – 7,500 BP. As examples, while no fluted points were found at Spruce, several Stemmed sites were recorded there, no fluted points have been found in Little Boulder Basin but a Stemmed point was recovered, a single Clovis perform was found at Tosawihi but 22 Stemmed points were recovered from several different sites, and so forth. This general pattern of no fluted points present but one or more stemmed points present has been documented at over 100 localities across northeastern Nevada over the past 30 years (e.g., Frampton et al. 1985; Murphy and Frampton 1985; Hockett 1991; Malinky and Goebel 2003; Fawcett 2005; Baker and Goebel 2006; Fawcett and Hockett 2006). Additionally, recent data from Bonneville Estates Rockshelter (Goebel et al. 2003) confirm that the intensity of site occupation rose sharply during the Dry Gulch phase compared to earlier occupations -- and the subsistence pattern at this time was not focused on large game hunting but rather on a broad-based, eclectic diet. Thus, the relatively low numbers of points per century during the Dry Gulch phase is probably based on a number of factors, including (1) relatively low levels of population compared to Late Holocene levels, although populations grew considerably over that seen during the Izzenhood phase; and (2) a diverse diet that focused extensively on marsh resources in lowland habitats and a wide variety of resources in mid-slope and upland settings that included large mammals, small mammals, birds such as sage grouse, insects, and most likely plant resources such as fruits.

Recently, I suggested that Middle Holocene foragers relied on large game animals more so than did Early Holocene foragers, as seen at a number of cave and rockshelter sites across the Great Basin (Hockett 2005). Interestingly, the data from the four samples of projectile points described above generally corroborate this pattern. Ironically, populations appeared to have declined in many regions of the Basin at this time as well, or during the transition between the Dry Gulch and Pie Creek phases, including at Bonneville Estates Rockshelter. Nevertheless, the numbers of Large Side-Notched points per century actually increases compared to Late Pleistocene and Early Holocene levels. There is a possibility, then, that when Middle Holocene groups forayed into these regions they were seeking large mammal resources more intently than the Dry Gulch phase foragers.

The Late Holocene in the Great Basin seems to indicate that both human populations and large game hunting patterns differed considerably from those seen in earlier times. Sites that contain Gatecliff and Humboldt points are more numerous than sites that contain Large Side-Notched points, and large game hunting spikes considerably from the Dry Gulch phase based on numbers of points per century. Whether this pattern suggests greater reliance on large game and larger populations is difficult to assess. Faunal data from sites such as Bonneville Estates Rockshelter suggest that large game may have been as important to Middle Holocene foragers, and perhaps even more so, than Late Holocene foragers, despite the presence of fewer people. In any case, it seems clear that large game hunting was a significant subsistence component to early Late Holocene foragers throughout northeastern Nevada, including at the Tosawihi Quarries.

The middle portion of the Late Holocene shows interesting variability in the degree of large game hunting. This period, generally associated with the James Creek Phase, as well as the heart of the cool and moist Neoglacial, has been described as the "Good Times" by Elston (1982). That this period has been characterized as "good times" for Great Basin foragers seems

like a fair representation. These good times, however, did not necessarily mean that foragers were dining more frequently on steak covered with A-1 sauce. At Tosawihi and Spruce Mountain, there was a 30% drop in the number of points per century in each of these areas between the South Fork and James Creek phases, suggesting that the intensity of large game hunting relaxed there. However, in Little Boulder Basin south of Tosawihi, there is a 30% increase in points per century. This may suggest a shift in hunting grounds from further northward in the immediate vicinity of Tosawihi in the South Fork phase to a greater emphasis in Little Boulder Basin to the south during the James Creek phase. Thus, the Tosawihi-Little Boulder Basin region may document a shift in favored hunting grounds for large game between 5,000 and 1,300 BP rather than reductions in intensity through time per se. Spruce, however, displays a more complex pattern. There is a 33% reduction in points per century in the Spruce area during the James Creek phase. The vast majority of the points from this sample come from communal kill spots (Hockett 2005). This reduction in points could have been caused by a number of factors, including reduced frequencies of communal kills or changes in killing technique from an emphasis on shooting or stabbing to clubbing and strangling. It is impossible at this time to know which of these possibilities, or others, caused this reduction in the intensity of points during the 'Good Times' of the James Creek phase. One of these other possibilities, however, might be a shift in the location of hunting grounds similar to that seen between Tosawihi and Little Boulder Basin. In Pilot Creek Valley, located about 100 km (~50 miles) northeast of the Spruce area, points per century increased by 88% between the South Fork and James Creek phases. This suggests dramatic increases in large mammal hunting by foragers manufacturing Elko projectile points in this valley and nearby uplands such as the Toano Range. An interpretation of a shift in hunting grounds, of course, would assume that the foraging range of these peoples extended across both the Spruce Mountain and Pilot Creek Valley areas, which is certainly a possibility. In sum, then, there may or may not have been a fundamental change in the degree of large game hunting intensity between the early and middle phases of the Late Holocene; rather this period may have been characterized by shifts from one valley to another without entirely ignoring the previous preferred hunting grounds of the South Fork Phase. Alternatively, if foraging radii were being reduced because of increases in population during the James Creek phase, then the data from Spruce and Pilot Creek Valley, for example, may well indicate that some populations were able to rely on large game resources to greater degrees than other forager groups – in other words, we may not have a one-size-fits-all scenario, and perhaps, just perhaps, we need to not look at all of the Great Basin foraging societies during the James Creek phase under a single, normative umbrella, with all foraging groups behaving precisely the same way.

The introduction of the bow-and-arrow and the beginning of the archaeologically-defined Late Archaic in the central Great Basin witnessed the influence of Fremont material culture in northeastern Nevada, including all four areas of projectile point distributions considered here. This period, represented by the Maggie Creek phase, is generally associated with a warm and wet climatic pattern and the concomitant expansion of grassland habitat along with relatively small herds of bison (Currey and James 1982; Grayson 1993). Compared to the preceding James Creek Phase, the earliest Late Archaic foragers reduced their intensity of large game hunting at both Spruce and Pilot Creek Valley, while large game hunting expanded considerably in the Little Boulder Basin-Tosawihi Quarries area. In the case of Spruce Mountain and Pilot Creek Valley,

points per century dropped by 22% and 35%, respectively. However, at Little Boulder Basin and Tosawihi, points per century increased by 200% and 120%, respectively. This variability between the two general regions of northeastern Nevada is most intriguing, and once again suggests that caution must be exercised in making sweeping generalizations about large game hunting across the Basin during specific time periods; it also suggests that micro scale patterns do not always mirror larger, macro-scale patterns.

There is probably enough accumulated evidence now to suggest that previous interpretations of Protohistoric Great Basin foragers as relying primarily on small game and seed resources is simply in error. Three of the four regions analyzed here show relatively substantial increases in points per century during the Eagle Rock phase compared to Maggie Creek phase levels. At Pilot Creek Valley and Spruce points per century rise by 60% and 47%, respectively. It is unlikely that these data are simply the result of sample bias due to the recent accumulation of these sites. Northeastern Nevada also contains one of the highest concentrations of aboriginal pronghorn corrals known from western North America (e.g., Hockett 2005), so large game hunting was clearly important to some Protohistoric groups. In the Little Boulder Basin-Tosawihi Quarries area, as noted previously, points per century from the Maggie Creek to the Eagle Rock phases dropped by 53% in Little Boulder Basin at the same time that they increased by 340% at Tosawihi. Again, sweeping generalizations are not likely to be very useful in describing land use patterns at the micro-scale level, the latter of which more closely matches the social and environmental circumstances in which individual foraging societies were engaged during decision-making about subsistence.

CONCLUSION

In summary, the Tosawihi Quarries remain largely intact. Although mining continues within the Quarries, all of the current facilities have been placed within the two existing open pits that were excavated in the extreme southwestern corner of the District in the 1980s. The current mining operation is underground, where deep veins of gold and silver are sought. The Tosawihi Quarries Archaeological District (26EK6624) is about 4,000 acres in size. It contains over 160 loci eligible for the National Register of Historic Places. These loci include quarry pits where the mining of toolstone took place, rockshelters, campsites, lithic reduction stations, and sacred spots. While the Quarries have obvious significance as a source of raw material for making stone tools, it is equally apparent that the area served a variety of other purposes over the past 13,000 years. Large game hunting was one of these purposes. Others include plant processing (milling stones are not uncommon in and surrounding the District) and as a place for sacred ceremonies. The District boundaries contain two perennial springs, two additional perennial springs are located at the base of Big Butte just to the north of the Quarries, and, during above-average water years, water perennially flows down Little Antelope Creek within the heart of the District. In short, water was not a limiting factor, nor were plant and animal resources. The region continues to support populations of mountain sheep, pronghorn, deer, marmots, squirrels, hares, and rabbits. Important plant resources including Great Basin wild rye, Indian ricegrass, and wild onion are all abundant throughout the District and surrounding area. In short, the Tosawihi Quarries had it all – plant and animal resources, perennial water sources, and abundant toolstone.

Few loci have been investigated at the Tosawihi Quarries. The survey and excavation work completed by IMR in the 1980s and early 1990s established a baseline for future studies of the prehistoric use of this important region of northeastern Nevada.

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Appendix 1.

List of the major surveys in and near the Tosawihi Quarries Archaeological District since 1977. The list is in order, from earliest to latest, based on the BLM report number. Report numbers preceded by an asterisk (*) are included in this BLM compilation of reports.

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Appendix 2.

Newly designated loci in the Tosawihi Quarries Archaeological District (26EK6624) cross-referenced with their previously designated site/locus numbers. A * designates a newly defined boundary for a locus by the BLM using GPS technology. All other boundaries were taken from site reports.

New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #
1	26EK3509	2	26EK3249/3250	3	26EK3263
4	26EK3226; 26EK3032 - locus 181	5	26EK4663	6	26EK3052
7	26EK3055	8	26EK3068	9	26EK3053
10	26EK3076	11	26EK3127	12	26EK3140
13	26EK3078	14	26EK3073	15	26EK3062
16	26EK3070	17	26EK3069	18	26EK3071
19	26EK3060	20	26EK3057	21	26EK3050
22	26EK3058	23	26EK3049	24	26EK3045
25	26EK3032 - loci 156, 157	26	26EK3032 - loci 148, 149	27*	26EK3032 - loci 158, 159
28*	26EK3032 - locus 161	29*	26EK3032 - loci 162, 163, 165, 166, 169, 188	30	26EK3032 - locus 194
31*	26EK3032 - loci 42, 43, 44, 46, 47, 64, 91, 102, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205	32	26EK3103; 26EK3032 - locus 45	33*	26EK3032 - loci 151, 152, 153, 154, 155, 177, 219

New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #
34*	26EK3032 - loci 63, 65, 67, 68, 69, 78, 79, 86, 87, 104, 107, 108	35*	26EK3032 - loci 77, 81, 103, 105, 106	36*	26EK3032 - loci 82, 83, 84, 85, 124, 209, 214, 215, 224
37*	newly defined locus	38*	26EK3032 - loci 127, 128, 211, 212	39*	newly defined locus
40	26EK3222; 26EK3032 - locus 125	41	26EK3218; 26EK3032 - locus 120	42	26EK3220; 26EK3032 - locus 122
43	26EK3221; 26EK3032 - locus 123	44	26EK3217; 26EK3032 - locus 119	45	26EK5080
46	26EK3216; 26EK3032 - locus 118	47	26EK3215; 26EK3032 - locus 117	48	26EK3227; 26EK3032 - locus 210
49	26EK3214; 26EK3032 - locus 116	50	26EK3212; 26EK3032 - locus 114	51*	26EK3032 - loci 70, 92, 109, 110, 111, 112, 113, 213
52*	26EK3032 - loci 71, 72, 73, 74, 75, 76	53*	26EK3032 - loci 62, 100, 222	54*	26EK3032 - loci 60, 61
55	26EK3213; 26EK3032 - locus 115	56	26EK3032 - loci 59, 66	57*	26EK3032 - loci 57, 58, 80

New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #
58*	26EK3032 - locus 56	59	26EK3211; 26EK3032 - locus 55	60	26EK3210
61*	26EK3032 - loci 52, 54	62	26EK3209; 26EK3032 - loci 53, 95	63*	newly defined locus
64*	26EK3032 - locus 51	65*	26EK3032 - loci 33, 49, 50, 88, 89, 99	66*	26EK3032 - loci 30, 96, 97
67*	26EK3032 - locus 30	68*	newly defined locus	69*	newly defined locus
70*	newly defined locus	71*	26EK3032 - loci 32, 90	72	newly defined locus
73*	26EK3032 - loci 37, 39, 40, 41, 48	74*	26EK3032 - locus 101	75*	26EK3032 - locus 226
76*	26EK3032 - loci 34, 206	77*	26EK3032 - loci 25, 35, 36, 225	78	26EK3032 - loci 24, 164, 208
79*	26EK3032 - loci 27, 28, 29	80*	26EK3032 - locus 10	81	26EK3032 - locus 220
82	26EK3032 - locus 221	83*	26EK3032 - loci 16, 17	84*	newly defined locus
85	26EK3205	86	26EK3206	87*	newly defined locus

New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #
88*	newly defined locus	89*	newly defined locus	90*	newly defined locus
91	26EK5044	92*	newly defined locus	93	26EK3199
94	26EK3176	95	26EK5046	96	26EK5077
97	26EK5048	98	26EK5047	99	26EK5049
100	26EK5051	101	26EK5072	102	26EK5073
103	26EK5076	104	26EK5071	105	26EK5065
106	26EK5052	107	26EK5067	108	26EK5050
109	26EK5054	110	26EK5053	111	26EK5058
112	26EK5068	113	26EK5069	114	26EK5059
115	26EK5066	116	26EK5060	117	26EK5062
118	CRNV-12-11402	119	CRNV-12-10505	120	CRNV-12-11527
121	CRNV-12-11404	122	CRNV-12-11405	123	CRNV-12-11789
124*	newly defined locus	125	CRNV-12-11403	126	26EK3032 - loci 1, 2, 3, 4, 5, 6, 7, 8, 9
127	26EK3032 - loci 11, 14, 15, 126	128	26EK3032 - locus 31	129	26EK3032 - locus 38
130	26EK3032 - locus 94	131	26EK3032 - locus 121	132	26EK3032 - loci 129, 131

New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #	New Locus #	Previous Site/ Locus #
133	26EK3032 - locus 130	134	26EK3032 - loci 132, 133	135	26EK3032 - locus 134
136	26EK3032 - locus 135	137	26EK3032 - loci 136, 137, 138	138	26EK3032 - loci 139, 140, 141
139	26EK3032 - loci 142, 143	140	26EK3032 - loci 144, 146, 147	141	26EK3032 - locus 145
142	26EK3032 - locus 150	143	26EK3032 - loci 160, 167, 168	144	26EK3032 - locus 170
145	26EK3032 - loci 171, 172, 173, 174, 175	146	26EK3032 - locus 176	147	26EK3032 - loci 182, 183
148	26EK3032 - loci 184, 185, 186, 187, 189	149	26EK3032 - loci 190, 191, 192, 193, 207	150	26EK3032 - locus 216
151	26EK3032 - loci 217, 218	152	CRNV-12-8968	153	newly defined locus
154	newly defined locus	155	newly defined locus	156	newly defined locus
157	newly defined locus	158	newly defined locus	159	newly defined locus
160	newly defined locus	161	newly defined locus	162	newly defined locus
163	newly defined locus				

Appendix 3.

Sites eligible or unevaluated within the newly defined boundaries of the Tosawihi Quarries Archaeological District (26EK6624 and CRNV-11-10319).

Site #	BLM Report #
26EK3032	BLM1-489(P); BLM1-1101(P); BLM1-1327(P); BLM1-1878(P)
CRNV-12-10505	BLM1-1506(P)
26EK5044, 26EK5046, 26EK5047, 26EK5048, 26EK5049, 26EK5050, 26EK5051, 26EK5052, 26EK5053, 2KEK5054, 26EK5058, 26EK5059, 26EK5060, 26EK5062, 26EK5065, 26EK5066, 26EK5067, 26EK5068, 26EK5069, 26EK5071, 26EK5072, 26EK5073, 26EK5076, 26EK5077, 26EK5080	BLM1-1461(P)
CRNV-12-11402, CRNV-12-11403, CRNV-12-11404, CRNV-12-11405	BLM1-1720(P)
CRNV-12-11527	BLM1-1747(P)
CRNV-12-11789	BLM1-1883(P)
26EK3209, 26EK3210, 26EK3211, 26EK3212, 26EK3213, 26EK3214, 26EK3215, 26EK3216, 26EK3217, 26EK3218, 26EK3220, 26EK3221, 26EK3222, 26EL3226, 26EK3227	BLM1-1101(P), VOLUME 1
26EK3045, 26EK3049, 26EK3050, 26EK3052, 26EK3053, 26EK3055, 26EK3057, 26EK3058, 26EK3060, 26EK3062, 26EK3068, 26EK3069, 26EK3070, 26EK3071, 26EK3073, 26EK3076, 26EK3078, 26EK3103, 26EK3127, 26EK3140	BLM1-1124(P)
26EK3176, 26EK3199, 26EK3205, 26EK3206	BLM1-1161(P)
26EK3249, 26EK3250, 26EK3263, 26EK3509, 26EK4663	BLM1-1181(P), VOLUME 1

Appendix 4.

Sites mitigated within the newly defined boundaries of the Tosawihi Quarries Archaeological District (26EK6624).

Site #	BLM Report #
26EK3208/3085	BLM1-1101(P); BLM1-1124(P); BLM1-1207(P); BLM1-1668(P)
26EK3084; 26EK3092; 26EK3095	BLM1-1124(P); BLM1-1207(P); BLM1-1668(P)
26EK3170; 26EK3171; 26EK3184; 26EK3192; 26EK3195; 26EK3198; 26EK3200; 26EK3204	BLM1-1161(P); BLM1-1207(P); BLM1-1668(P)
26EK3032, LOCALITY 36; Note: Mitigated for criterion "d" only; BLM considers the site still eligible under criterion "a"	BLM1-1362(P)

Appendix 5.

Sites mitigated near the boundaries of the Tosawihi Quarries Archaeological District (26EK6624) and the Tosawihi Quarries Traditional Cultural Property (CRNV-11-9932).

Site #	Report #
26EK3160, 26EK3165	BLM1-1124(P), BLM1-1207(P), BLM1-1668(P)
26EK3237, 26EK3251	BLM1-1181(P), BLM1-1668(P)
26EK5040	BLM1-1449(P), BLM1-1641(P), BLM11845(P)

Appendix 6.

Sites eligible or unevaluated within 2 miles of the newly defined Tosawihi Quarries Archaeological District (26EK6624)and Tosawihi Quarries Traditional Cultural Property (CRNV-11-9932).

Site #	BLM Report #
26EK3223, 26EK3224, 26EK3225	BLM1-1101(P), VOLUME 1
26EK3051, 26EK3065, 26EK3067, 26EK3131, 26EK3132, 26EK3133, 26EK3134, 26EK3135, 26EK3141, 26EK3145, 26EK3151, 26EK3153, 26EK3154, 26EK3156, 26EK3157, 26EK3158, 26EK3159, 26EK3164	BLM1-1124(P)
26EK3246, 26EK3247, 26EK3252, 26EK3253, 26EK3254, 26EK3255, 26EK3262, 26EK3267, 26EK3269, 26EK3510, 26EK3511, 26EK3512, 26EK3513, 26EK3514, 26EK3515	BLM1-1181(P), VOLUME 1
26EK5043	BLM1-1448(P)
CRNV-01-128; CRNV-12-8229, CRNV-12-8242, CRNV-128243, CRNV-12-8244	BLM1-102(P); BLM1-1328(P)
CRNV-12-11927	BLM1-1907(P)
CRNV-12-11928, CRNV-12-11929, CRNV-12-11940	BLM1-1909(P)
CRNV-01-190, CRNV-01-192	BLM1-185(P); BLM1-561(P)
CRNV-01-187	BLM1-162(P)
CRNV-11-9675	BLM1-1770(P) Note: Approximately 3 miles from Quarries
CRNV-12-11983	BLM1-1927(P) Note: Approximately 3 miles from Quarries